



EXCERPT FROM THE PROCEEDINGS

OF THE SIXTH ANNUAL ACQUISITION RESEARCH SYMPOSIUM

**EXAMINING THE INSTITUTIONAL FACTORS AFFECTING COST
GROWTH IN DEFENSE ACQUISITION: ADDITIONAL INSIGHTS MAY
YIELD MORE EFFECTIVE POLICY INTERVENTIONS**

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by

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The following article is taken as an excerpt from the proceedings of the annual Acquisition Research Program. This annual event showcases the research projects funded through the Acquisition Research Program at the Graduate School of Business and Public Policy at the Naval Postgraduate School. Featuring keynote speakers, plenary panels, multiple panel sessions, a student research poster show and social events, the Annual Acquisition Research Symposium offers a candid environment where high-ranking Department of Defense (DoD) officials, industry officials, accomplished faculty and military students are encouraged to collaborate on finding applicable solutions to the challenges facing acquisition policies and processes within the DoD today. By jointly and publicly questioning the norms of industry and academia, the resulting research benefits from myriad perspectives and collaborations which can identify better solutions and practices in acquisition, contract, financial, logistics and program management.

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Examining the Institutional Factors Affecting Cost Growth in Defense Acquisition: Additional Insights May Yield More Effective Policy Interventions

Presenter: Phil Candreva's research investigates how government organizations use financial information in such areas as resource allocation decision-making, accounting, performance measurement, and management reform. Most contemporary public sector management reform efforts are either explicitly tied to financial decisions (e.g., performance-based budgeting) or are implicitly tied through other management efforts (e.g., efficiency programs). Since budgets are the battlefield on which public policy disputes are waged, public managers must become proficient at showing how effectively and efficiently those resources are being used in order to preserve or expand their resource base. Such efforts are a critical dimension of contemporary management reform.

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Executive Summary

The US Defense Department suffers from persistent, but not certain, cost growth within major acquisition programs. Over the past few decades, scores of empirical studies have examined the causes and consequences of cost growth and have shed light on characteristics of programs that fail to meet cost-performance goals. They have looked at factors such as the size of the program, its phase in the development cycle, the type of weapon being purchased and organizational structure. Other studies have taken a more qualitative view and have considered the interplay of actions within a program office and between a program office and its environment. Both types of studies have provided countless recommendations to fix defense acquisition. Yet, problems persist.

The question motivating the present study is: given the materiality of the problem (hundreds of billions of dollars), the number of times it has been studied, the attention of the highest levels of government, and numerous attempts to reform acquisition, why does the problem persist? What have the studies and policy prescriptions missed?

Two recent and important deviations from the norm of past studies focused less *on* the acquisition program and more on the decisions made by officials *about* the program. This paper was motivated by those studies and was further informed by various literatures, including behavioral finance, group decision-making psychology, and organizational failure. First, cost growth is a matter of financial behavior—allocations are made; funds are applied to particular objects of expense based upon estimates; new information becomes available and reallocations occur; additional funds are requested on a regularly recurring annual cycle. There are well-known biases in financial behavior derived in other contexts that may exist in defense acquisition. Second, some of those decisions are made by individuals, but many are group decisions. Fully informed, rational decisions may not be possible in the defense acquisition context because of political considerations, information limitations, limitations on information-processing capabilities, mental models and heuristics, the experience of participants, and other



factors. Third, there is a growing literature on the causes of organizational failure, and by most definitions, persistent cost growth is an example of such failure. Many of those studies cite sociological and cultural factors as causes. It is apparent that a sociological approach, rather than an economic or systems engineering approach, has the promise to provide fresh insights into an old problem.

This paper makes the case for the application of a framework taken from the worlds of political science and sociology to gain a better understanding of the problem of cost growth. The Institutional Analysis and Diagnosis (IAD) framework has been used to study the dynamics of complex decision-making processes involving collective resources. Those situations are similar to the resource-allocation processes in the DoD. The framework is focused on “action arenas” composed of actors who decide from among diverse actions based upon the role they play, their individual preferences, the information they possess, and the expected payoffs from potential outcomes. These action arenas are not situated in a sterile context. They are affected by the attributes of the environment, attributes of the communities within which the actors identify, rules, and institutional norms. Within the action area, patterns of interaction result in outcomes that can be evaluated based on some criteria.

While the DoD has codified processes that dictate how the PPBE process chooses programs and funds them and how acquisition programs operate, those rules are augmented and contravened by institutional norms. Changes to rules face cultural obstacles. A GAO Report (GAO-09-295R, 2009, February 27) commented on recently proposed reforms, “Our discussions with acquisition experts indicate that these changes may not achieve the desired improvement in acquisition outcomes unless they are accompanied by changes in the overall acquisition environment, its culture, and the incentives provided for success.” The effect of culture on acquisition program performance is acknowledged, but it is not well understood. Given a better understanding, decision-makers can design more effective policy interventions.

Toward that end, this paper illustrates the application of the IAD framework to defense acquisition. The data set is a collection of studies of defense acquisition cost growth from government organizations, academics, and think tanks. Using a software tool, the content of those reports is analyzed according to the IAD framework.

The report then proposes a stream of research using the IAD framework—in conjunction with theories of behavior finance, group decision-making, and organizational failure—to improve our understanding of the dynamics and factors that result in cost growth. This framework has been successfully employed in other contexts to perform both qualitative field research and laboratory experimentation. Thus, the report proposes a mutually supportive set of studies that combine the realism of field studies with the ability to rigorously test hypotheses through models in computational and laboratory experiments.

By studying institutional variables that have not previously been considered, we may gain fresh insights on the problem. Those insights will provide an understanding of how and why various policy prescriptions may or may not result in better outcomes. By considering and applying various remedies in a laboratory setting, we may be able to design more effective policy interventions.



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- Pallet Management System
- PBL (4)
- Privatization-NOSL/NAWCI
- RFID (6)
- Risk Analysis for Performance-based Logistics
- R-TOC Aegis Microwave Power Tubes



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Defense Acquisition in Transition

6TH ANNUAL ACQUISITION RESEARCH SYMPOSIUM

Examining the Institutional Factors Affecting Cost Growth in Defense Acquisition May Yield More Effective Policy Interventions

Phil Candreva

Senior Lecturer, Naval Postgraduate School

An Imperative...

“The Department of Defense (DoD) needs to understand the adversary and host population social structure, culture, motivations, beliefs and interests that contribute to behavioral actions and responses. This understanding is necessary to recognize behavioral patterns and gain influence in interactions[...].”

- USD (AT&L)



Speaking of behavior...

“Cost growth due to decisions changes the acquisition plan [...] and in most cases results in requiring substantially more resources to complete the system acquisition. This translates to real growth in required budget outlays over time.”

- RAND



Culture and policy

“Our discussions with acquisition experts indicate that these changes may not achieve the desired improvement in acquisition outcomes unless they are accompanied by changes in the overall acquisition environment, its culture, and the incentives provided for success”

- GAO



BLUF

More effective policy interventions addressing the phenomenon of cost growth in defense acquisition, may result from a stream of research encompassing field studies and corresponding laboratory and computational experimentation, employing a framework of institutional elements, informed by theories of financial behavior, group decision-making, and organizational failure.



Cost Growth Studies

- Size of Program
- Categories of Growth
 - Types of systems
- Acquisition Phases
 - Organizational structural issues
- Knowledge flows
 - Multi-factor

More descriptive than explanatory

Inadequately address the social, political, institutional, and cultural factors

RAND MG670

Decisions by government officials account for 2/3 of cost growth

OK, but *why* were those decisions made?

Decision-making in organizations
(Beach & Connolly, March, B. Jones)

Behavioral Finance
(Kahneman & Tversky, Thaler)

The Problem:

Understanding institutional influences on group decision-making, in which boundedly rational actors employ strategies to allocate resources, the outcomes of which tend to be undesirable

“strategic misrepresentation” in project estimates (Flyvbjerg) and in budgeting (Jones & Euske)

Permanently failing organizations (Meyer & Zucker), failure in bureaucratic planning (Bissell), deviance in organizations (Lee & Gailey), corruption (Collier)

Institutional factors affect choices

“institutionalism sees organizations as bounded social constructs of rules, roles, norms, and the expectations that constrain individual and group choice and behavior.”

- Frederickson & Smith

Which may result in...



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Means > ends

“In the modern world of productivity, performance and outcome measurement, institutionalism reminds us that institutions and those associated with them shape meanings, rely on symbols, and seek an interpretive order that obscures the objectivity of outcomes.”

- Frederickson & Smith



Appropriateness > outcomes

Decisions are made not through a logic of rational choice or a logic of consequences, but through rule-following and the pairing of an understanding of appropriateness to the specifics of the situation. Often in public administration, appropriateness is paramount.

-March



Technical solution > social cost

Cultural orientations of technical rationality and routinization of operations lead to a moral blindness in business decisions; achieving a technical solution can become paramount and the associated social costs are undervalued.

- Vaughn



Persistence > performance

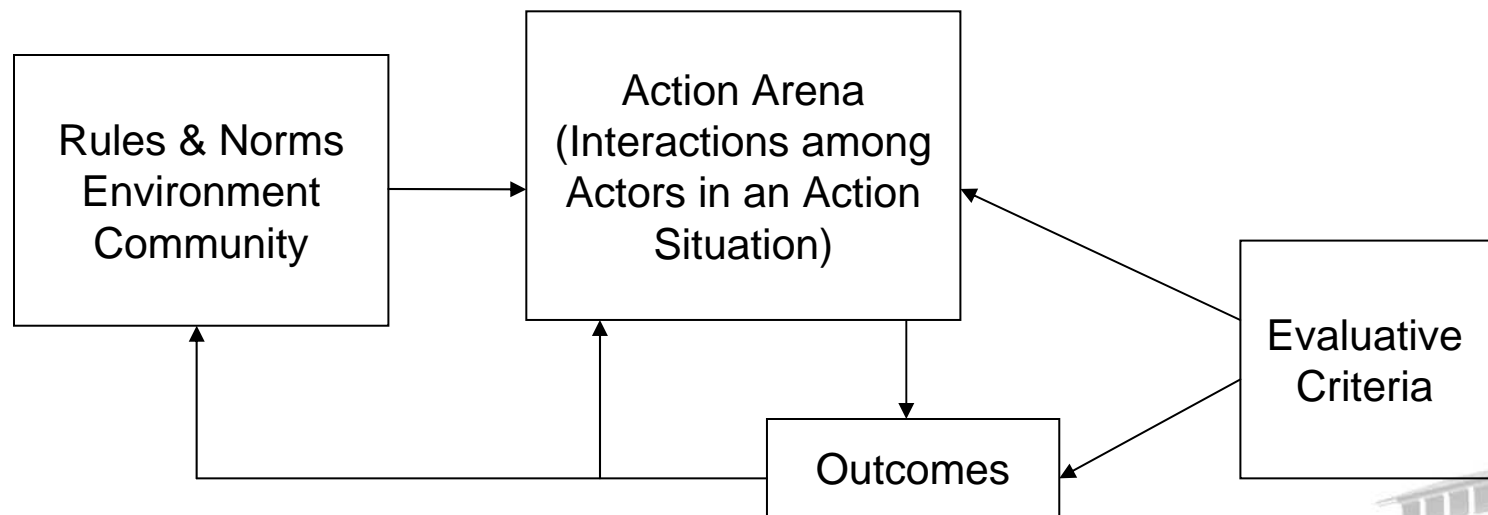
An organization's performance need not determine its survival, provided there are sufficiently powerful actors whose interests are served more by the presence of the organization than its performance.

- Meyer & Zucker



A proposed research agenda

IAD Framework



- Actors are defined by four characteristics
- Action situations are defined by seven characteristics



From field to lab and back

- Field work to gather data on institutional elements
- Computational and laboratory modeling
- Field validation
- Computational and laboratory experimentation of policy interventions and responses
- Implementation and assessment

